



An integrated approach to managing extended supply chain networks

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Abstract In an effort to improve their competitive position in a rapidly changing marketplace, many companies have replaced their traditional supply chains with extended supply chain networks built on a foundation of supply chain collaboration. These extended networks require the use of decision support tools and technologies to improve both operating efficiencies and customer service, but many companies have struggled to realize the expected benefits of these tools and the increased collaboration. This article recommends that companies adopt an integrated strategy of people, processes, and technology to achieve their competitive supply chain goals. Our recommendation is backed by the results of a survey we conducted of senior-level practitioners concerning the importance and challenges of supply chain collaboration. The article concludes with a set of managerial recommendations to improve a company's collaborative efforts within its supply chain.

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1. Introduction

Increased competition and shortened product life cycles are forcing executives to rethink how their businesses are going to compete today. In an effort to provide more value-laden products in shorter periods of time, executives are replacing their traditional supply chains with extended supply chain networks (Accenture, 2005; Cisco Systems Inc., 2006; Microsoft, 2006). Extended supply chain

networks represent an expanded set of collaborating companies, both upstream and downstream, that work together to bring value-laden products to the customer (Davis & Spekman, 2004). While extended supply chain networks tap into a wide array of external resources, they also require a high degree of supply chain collaboration (SCC) between partners as employees identify and analyze important developments in their work environment and then pass this information on to others to act upon (Bitran, Gurusurthi, & Sam, 2006; Hoque, 2002).

To achieve SCC, managers are using the latest decision support systems and technologies (e.g., APS, CPFR, SRM) to improve their firms' agility, reduce cycle times, achieve higher efficiencies, and deliver value-laden products to customers in

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a timely fashion (Giménez & Lourenço, 2008; Radjou, 2003). However, in some cases these tools are not making the firms more competitive. Forrester (2005) reported that while 48% of U.S. businesses implemented advanced supply chain technologies, only 9% considered future updates, with the remaining businesses not sure how to proceed. Microsoft (2006) found that a culture of openness contributed 36% to collaboration quality while the use of collaborative technology only contributed 16% to collaboration quality. Kelton Research found that while 80% of C-level executives believe in enterprise-wide collaboration, only 30% feel that communication tools have made it easier to work (Avanade, 2010).

Fawcett, Fawcett, Watson, and Magnan (2012) argued that the inability of companies to achieve high levels of SCC is in part due to the lack of removing behavioral constraints. These constraints include inter-firm conflict, nonaligned goals, and the non-sharing of sensitive information. These behavioral restraints also inhibit the use of the collaborative communication technologies in place (Setia, Sambamurthy, & Closs, 2008; Wu, Yenyurt, Kim, & Cavusgil, 2005).

The same observation was made during the development of Management Information Systems (MIS). The Standish Group found that 24% of MIS projects failed, 44% were challenged, and only 32% were successful when technology was considered the sole contributing force. The problem was that management did not realize that MIS projects hinge on having two systems in place: (1) a technical system that is concerned with the processes, tasks, and technology needed to transform inputs into outputs; and (2) a social system that represents the relationships among people, reward systems, and authority structures (Bostrom & Heinen, 1977).

Technocentric thinking, which is based upon the belief that SCC can only be achieved by having the right technology in place, has been reinforced by the business press, which has promoted information technology as a silver bullet. In this article, we argue that an integrated strategy—one that links people, processes, and technology—is a better strategy to employ when working to achieve SCC.

This position is supported in the literature presented herein as well as the findings of a SCC survey involving senior business practitioners. The article will conclude with a set of specific recommendations to facilitate SCC in extended supply chain networks.

2. Literature review

While there is growing interest in the benefits of SCC, management is often unsure of how to achieve

it. One executive was quoted as saying (Cohen & Roussel, 2005):

If you asked 100 supply chain executives for a definition, you'd likely get 100 different answers. Certainly most would agree that collaboration is important, that technology and relationship building are critical components, and that companies with effective collaboration skills are likely to have a competitive advantage. However, few executives would be able to offer a clear, unambiguous definition.

For those firms that forged with various SCC initiatives, the Computer Sciences Corporation (2004) found that only 44% of the firms had staff dedicated to improving external collaboration and of those collaboration initiatives, only 35% turned out to be moderately successful. Given the confusion surrounding SCC, a good place to start is by establishing an operational definition.

2.1. Supply chain collaboration

Davis and Spekman (2004) defined collaboration as a state where individual parties work together to achieve mutually beneficial outcomes. Cohen and Roussel (2005) and Ramanathan and Gunasekaran (2014) suggested that SCC is the means by which various partners work together toward mutual objectives through the sharing of ideas, information, knowledge, risks, and rewards. Hansen (2009) submitted that SCC takes place when people from different units help each other to achieve a common goal that goes beyond shipping data back and forth between parties.

Integrating this perspective with a significant collection of research,¹ we posit that SCC is best achieved when separate autonomous organizations successfully integrate their resources—people, processes, and technology—to achieve a common goal (see Figure 1). This allows the right people to connect with the right expertise or information at the right time to drive the right business decision. Having identified the three actors in SCC, the next step is to determine their respective roles across different buyer-seller relationships.

¹ Specifically, see Copacino (1997); Fredendall and Hill (2000); Melville, Kraemer, and Gurbaxani (2004); Poirier, Ferrara, Hayden, and Neal (2004); Gain (2005); Coyle, Langley, Gibson, Novak, and Bardi (2008); Fawcett, Magnan, and McCarter (2008); Soosay, Hyland, and Ferrer (2008); Hansen (2009); Fawcett et al. (2012); and Chopra and Meindl (2013).

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